REMARKS/ARGUMENTS

Claims 1 and 5- 23 are pending in the application. Claims 1-8, 12 and 16 stand rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 3,283,898 to Calhoun. Claims 9-11, 14, 15 and 17-20 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Calhoun, as applied to claims 1-8, 12 and 16, and further in view of U.S. Patent No. 7,113,629 to Onishi. These rejections are respectfully traversed.

Calhoun fails to provide a basis for the rejection of claims 1-8, 12 and 16 under 35 U.S.C. 102(b), because it fails to disclose each element of the claims. In particular, claim 1 includes "an image data system disposed at the second end of the rotating prism, the image data system generating image data as the prism rotates so as to generate two or more sets of image data from the field of view area." In contrast, Calhoun discloses a photocell mosaic that generates an analog signal waveform, see, e.g., Fig. 8 of Calhoun. This analog waveform is not image data, and it is not two or more sets of data. Instead, as disclosed in Calhoun at col. 6, line 70 to col. 7, line 7, the pulse width of the signal is used to determine the polar coordinate for a particle of dirt on a bottle. Calhoun suffers from numerous obvious disadvantages over a system that includes the claimed "image data system generating image data as the prism rotates so as to generate two or more sets of image data from the field of view area." First, if dirt particles are uniformly distributed on the surface of the bottle being inspected, then Calhoun will not detect any difference, whereas the image data generated by the claimed image data system can be used to perform image analysis that would detect such uniformly distributed dirt. Second, if no bottle is present, the system of Calhoun would simply generate a straight line, which would appear to an operator to be an acceptable result, whereas the claimed image data system would be able to determine from the image data that there is no inspection piece.

Likewise, claim 5 includes the system of claim 1 further comprising a quadrant inspection system coupled to the image data system, the quadrant inspection system receiving image data from one of four quadrants of the field of view area. The analog waveform of Fig. 8 of Calhoun is not broken into quadrants, and would be of no value if it were broken into quadrants – the pulse width can not be determined from just a single quadrant. The cited section of Calhoun merely confirms this – "The field 32 represents the **total area scanned** by a rotating prism 19 during each revolution." (Emphasis added). Nothing in Calhoun suggests that a single quadrant can be inspected, and Calhoun requires the analog waveform of one complete

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revolution in order to determine whether any dirt particles are present on the bottle being inspected.

Claim 6 includes the system of claim 1 further comprising a prism rotation controller coupled to the rotating prism, the prism rotation controller setting the rotation speed of the prism. Calhoun discloses no such rotation speed control, only a tachometer 29 attached to a motor 24. The motor turns at whatever speed it is designed for based on the amount of resistance from pulley 26, and the speed data from the tachometer 29 is used to analyze the analog waveform. There is simply no speed control disclosed by Calhoun.

Claim 7 includes the system of claim 1 further comprising an image data acquisition control coupled to the image data system, the image data acquisition control setting an image capture rate. The Examiner has cited to text in Calhoun that explains why two or more photocells are required (i.e. to generate an A.C. waveform so that the pulse width can be measured). The photocells do not have an "image capture rate." Such terminology is only relevant to digital image data acquisition and processing systems that generate image data utilizing pixel arrays. The primitive photocell system of Calhoun, used to generate an analog waveform, has no "image capture rate." It continuously receives varying resistance data from the photocells as a function of the amount of light that is impinging on the photocell. Such photocells are unrelated to modern image data picture elements, which integrate light energy received over a period of time, and which are read out (typically in array format) and reset so that an "image capture rate" can be maintained. Calhoun is simply irrelevant to the limitation of claim 7.

Claim 8 includes the system of claim 1 further comprising a quadrant data analysis system receiving the image data and generating die quadrant image data. The section of Calhoun at col. 3, lines 7-18 relied on again by the Examiner simply has nothing whatsoever to do with analysis of data from one quadrant. As stated repeatedly, Calhoun utilizes an analog waveform from one entire rotation to determine a pulse width that indicates the presence and location of a dirt particle.

It is noted that the Examiner has failed to provide any basis for the rejection of claims 12 and 16. Claim 12 includes a "method for inspection comprising: receiving image data of a first area from a prism; generating first area image data; rotating the prism; receiving image data of a second area from the prism; generating second area image data." Calhoun does not generate area

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image data. As described, it generates an analog waveform. There is simply no "area image data" provided by a segment of that analog waveform. The system of Calhoun requires a waveform from one complete rotation for analysis, because it is a single line that is used to generate a pulse width that can be used to locate the presence and location of a dirt particle. No image of the dirt particle is created – as previously noted, Calhoun is incapable of determining the difference between a clean bottle, a uniformly dirty bottle, and a missing bottle.

Claim 16 includes a "method for inspecting a semiconductor die comprising: receiving image data of a first area from a prism; generating first area image data that includes a first section of the semiconductor die; rotating the prism; receiving image data of a second area from the prism; generating second area image data that includes a second section of the semiconductor die." Calhoun discloses inspection of bottles, not semiconductor dies. At best, that would be a rejection under 35 U.S.C. 103, but it is further noted that the primitive inspection system of Calhoun would be incapable of generating the claimed first area image data that includes a first section of the semiconductor die and second area image data that includes a second section of the semiconductor die.

Withdrawal of the rejection of claims 1, 5-8, 12 and 16 is respectfully requested.

In regards to the rejection of claims 9-11, 14, 15 and 17-20 under 35 U.S.C. 103(a) as being unpatentable over Calhoun, as applied to claims 1-8, 12 and 16, and further in view of Onishi, it has been shown that Calhoun simply has no relevance to claims 1, 5-8, 12 and 16. The single analog signal that is generated by Calhoun is unrelated to systems like Onishi that generate image data. As such, there is no prima facie basis for the combination of the two references.

Furthermore, the application of Onishi merely confirms the shortcomings of Calhoun. For example, claim 9 includes the "system of claim 1 further comprising a die identification system receiving the image data and generating die image data." One can only wonder why Calhoun was considered sufficient to disclose generating the claimed first area image data that includes a first section of the semiconductor die as to claim 16, but why Onishi is required for the limitation of a "die identification system receiving the image data and generating die image data." In any event, Onishi discloses inspection of rectangular die segments by sweeping from side to side, not two or more sets of image data from a rotating prism. This shortcoming is discussed in greater detail below, but it is noted that as the prism of the claimed invention

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rotates, the image data that is generated changes orientation. Neither Calhoun nor Onishi disclose any functionality for compensating for such changing orientation, such as is disclosed in the pending application, and fail to anticipate the claimed inventions, either alone or in combination.

The shortcomings of Onishi can most readily be demonstrated by consideration of claims 18-20. Claim 18 includes the method of claim 16 further comprising rotating the second area image data to align with the first area image data. The Examiner relies on Fig. 4 of "Onish" as the basis for this rejection, but Fig. 4 does not disclose rotation. At best, Fig. 4 appears to disclose translation, but the description of Fig. 4 at col. 5, lines 27-32 merely states that "by copying the flags signifying the cell comparing inspection, flags signifying the chip comparing inspection are set to portions corresponding to the repetitive pattern areas 133 and 134. All this information is stored in the area memory 26 of image processor 20." There is simply no discussion of rotating anything.

Likewise, claim 19 includes the method of claim 18 further comprising eliminating overlapping sections of the image data. The Examiner cites to col. 7, lines 32-67 and col. 8 lines 23-34 of "Onish," but there is simply nothing in the cited sections that relates to eliminating overlapping sections of image data from two adjacent quadrants, that is captured using a rotating prism. See, e.g., Fig. 1B of the pending application, which shows such overlapping sections of the image data. Onishi does not disclose or suggest the generation or analysis of image data generated in such a manner.

Claim 20 includes the method of claim 16 further comprising analyzing the second area image data based on a predetermined angular relationship to the first area image data. The Examiner cites to col. 8, lines 35-670 of "Onish," but the closest that section comes to discussing the present invention is that "A window other than rectangular, such as a circular window, may be used **as long as it is in vertical and left-right symmetry.** Where a circular window is used, the window is shifted in a circle. In this case, the diameter of the circular window corresponds to N noted above where n is the amount of shift of the circular window." (Emphasis added). This brief section of Onishi is confusing at best. Why is there a requirement of vertical and left-right symmetry? What does it mean to say that the window is "shifted in a circle?" If that is supposed to mean that it is shifted about a center at a fixed radius, such as by using a rotating prism, where is the structure disclosed in Onishi for generating such image data? Nowhere. Onishi only

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discloses scanning a die by moving a window from side to side. There is simply nothing in Onishi that remotely discloses how to utilize image data from two or more quadrants of an area of inspection, such as is claimed in the pending claims and disclosed and described in the pending application.

New claims 21-23 are presented in means plus function form to invoke the provisions of 35 U.S.C. 112(6). In particular, the applicants note that Federal Circuit precedent in the line of cases resulting from *WMS Gaming, Inc. v. International Game Technology*, 184 F.3d 1339. (Fed. Cir. 1999) requires the Examiner to identify the corresponding structure for means plus function elements drawn to software-implemented inventions from the algorithms disclosed in the specification, such as the means for identifying component edges from image data generated by a rotating prism of claim 22 shown in the algorithm of Figure 4 and the means for setting image capture rate using prism rotation speed of claim 23 shown in the algorithm of Figure 5. Accordingly, such algorithms or their equivalents must be found in any prior art cited by the Examiner to support any rejection of the claims under controlling Federal Circuit precedent.

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CONCLUSION

In view of the foregoing remarks and for various other reasons readily apparent, Applicants submit that all of the claims now present are allowable, and withdrawal of the rejection and a Notice of Allowance are courteously solicited.

If any impediment to the allowance of the claims remains after consideration of this amendment, a telephone interview with the Examiner is hereby requested by the undersigned at (214) 953-5990 so that such issues may be resolved as expeditiously as possible.

No fees are believed to be due at this time. In particular, it is noted that the time set for responding to the office action was three (3) months, such that this response is timely filed within the no-fee response period. However, if any applicable fee or refund has been overlooked, the Commissioner is hereby authorized to charge any fee or credit any refund to the deposit account of Jackson Walker L.L.P., No. 10-0096.

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Respectfully submitted,

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